

W A R H I P S

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CHIPS is sponsored by the Department of the Navy Chief Information Officer (DON CIO) and the DON IT Umbrella Program Office, Space and Naval Warfare Systems Command, San Diego, CA.

CHIPS is published quarterly by the Space & Naval Warfare Systems Center, Charleston. USPS 757-910 Periodical postage paid at Norfolk, VA and at additional mailing office. POSTMASTER: Send changes to **CHIPS**, NCTAMS LANT, 9625 Moffett Ave., Norfolk, VA 23511-2784

Submissions. Articles and other contributions are welcome. Please submit articles in Word or ASCII format. Graphics are accepted in: .jpg, .gif, .tif and .eps format. We reserve the right to make editorial changes. All articles printed in **CHIPS** become the sole property of the publisher. Reprint authorization will be granted at the publisher's discretion.

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Navy Marine Corps Intranet



What is it? The Navy Marine Corps Intranet (NMCI) is a strategic capability the Department of the Navy (DON) will use to meet the challenges of executing our warfare doctrine in support of JointVision 2010, the Revolution in Military Affairs and the Revolution in Business Affairs. Replacing the Navy's numerous shore-based networks, NMCI will equip us with the access, interoperability and security for our information and communications by providing voice, video and data services to all Navy and Marine Corps personnel. Coupled with the Navy's shipboard Information Technology for the 21st Century and the Marine Corps Tactical Network (MCTN), NMCI will provide a worldwide reachback capability for our deployed forces.

Our People. Our people are our most important assets. NMCI is not an initiative to downsize our workforce, but rather an initiative to make our workforce more efficient, more productive and better able to support the critical warfighting mission of our Naval forces. We will make every effort to retain our Information Technology (IT) personnel in knowledge-creation, management-related activities and security oversight as we implement NMCI.

How Will We Pay For It? The Navy budgets for the operation of hundreds of networks and network services each year. The FY-01 IT budget submission for the Navy is \$3.46 billion. A detailed analysis of the FY-01 budget submission by the DON indicates that approximately \$1.62 billion of the total FY-01 IT budget could be applicable as the NMCI source funding, which exceeds the projected funding requirement.

A New Approach. NMCI, an adaptation of what is commonly practiced in the commercial sector, represents a new approach to acquiring IT services for the government. NMCI will be a performance-based, enterprise-wide services contract that incorporates future strategic computing and communications capability that is managed much the same as any "utility." It will be purchased from the commercial sector just as we buy other types of utilities (e.g., water, telephone, gas and electricity), paying for the service as it is delivered. In addition, the NMCI contract requires that the prime contractor use small businesses for at least 35 percent of the work and includes incentives for exceeding that figure. To facilitate visibility of small businesses, the Department has identified and publicized its current small business IT contractors in good standing.

The Ultimate Objective. NMCI is an all-encompassing information/communications solution. It will leverage the national infrastructure and connect the "E" in Enterprise Resource Planning. Bringing the Department together in an unprecedented way, this global connectivity will enable our civilians, Sailors and Marines to reach the rich intellectual resources that extend throughout the Naval Enterprise.

Printer please insert Under Secretary letter here.



The Under Speaks on NMCI



As you know we're all very excited about the Navy Marine Corps Intranet. There are a lot of important reasons to be excited. First is this: NMCI and the important content that goes on it will give our Sailors, Marines and civilians across the Navy and Marine Corps the tools to get more work done in less time. The Intranet will give us a way to get business accomplished and still have time to think about the future; a way to communicate with partners across the Department or reach out to industry and say, "So what are you doing?" on a specific issue. That will make our ability to do our jobs more powerful. We owe this to our nation – providing the right tools for skilled workers to get the job done, and NMCI is a great tool.

The second is: As we reach out and recruit more and more young men and women to come into military and civilian service, we'll need to show them we're a modern, energized, well managed operation or they're going to find more exciting places to work. You can't offer these young people typewriters when they've grown up on computers and the Web.

The third is: Corporate and social America are rapidly becoming Web-based. If we can't plug into what is going on, then we're going to become increasingly divorced from the nation. That's not good because the nation needs to understand and believe in us. In addition, there are enormous riches to be had from the private sector. We need to be able to reach in to the supplier networks and other new places to get information. NMCI will let us do that.

We all have a role in making this work. The Intranet in many ways is a utility upon which electrons will flow. It's that simple. We need to create innovative Web-based solutions that will enable us to work smarter. For instance, why can't you get into your pay account at DFAS and make changes? Someone needs to build that program. Another idea that's in the early implementation phase is "One Stop Shopping." You put a part number in once and an agent goes around the world looking for that part. When found, you tell it to place an order and it tracks it and brings it to you. Federal Express already does this. Why can't we do that with the packages we've got moving all around the world?

Investment in the Future

The Secretary and I are really excited about the Navy Marine Corps Intranet. In 1970, a set of Defense leaders saw the power of stealth and began to develop that technology. By the 80s and 90s we began to see it show up in aircraft, directly influencing how we fought the Gulf War and influencing even more how we fought in Bosnia and Kosovo. NMCI has the same power. In 2010 or 2020 the Navy Marine Corps Intranet is going to allow us to do things we can't even imagine now. We'll look back and say, "I was there in the beginning. I helped make it happen." NMCI is an investment in America's future, and it's the right thing to do.

Building Knowledge

Another reason I find NMCI such an exciting proposition is that it allows us to change the way we build knowledge and wisdom. Think of the way things work right now. You have a great idea. You want to test the idea on other people to see if it is as good as you think it is. What do you have to do? You get on the phone. You write letters or maybe even send e-mails. Slowly, you receive feedback. If we had NMCI running full-speed today, it would be a simple proposition to create an interactive dialogue – private and secure – with people around the world. You could pick someone from PACFLT, someone from the Marine Corps in Europe, someone in the Pentagon and say, "Tell me what you think of this." Within an hour, or a day, you could look back into your little box where you created this group and read their thoughts and respond back and forth. You would know quickly whether your idea is not such a great idea, or whether it is a powerful idea that you should make happen.

See the difference? Group processes – the way we operate will change. We'll certainly build some great software to put on the Intranet so that data can be displayed across every sector of the Navy and Marine Corps. For example, you will be able to find out exactly where all the ships are around the world if that's your job. Underneath it all, NMCI will change and expand how we work as a team – sharing information and knowledge, making us a powerful fighting force. ►



Warfighting

A lot of people ask me, "What does NMCI have to do with warfighting?" In the end it has everything to do with warfighting. We already have our fleets in net-centric battle groups. Our Marine Corps already has many communication systems in place, but what they don't have is the ability to move from the fleet back to America – what we call the "reach back." A young Marine on the battlefield who needs information about a biological agent should be able to reach back to America immediately or he will be in trouble. A ship with a broken engine or broken pump should be able to get back to the manufacturer within minutes and say, "What went wrong here? Which part is the best one to purchase?" That reach back will change warfighting on many levels. We'll become a complete fighting unit from the front of the battle line all the way back to the deepest, darkest corner of the warehouse. We'll be linked across the Enterprise. That is what the Navy Marine Corps Intranet is all about.

People

Many people ask me whether their jobs are at stake as we implement NMCI. My short answer is this: Your job is not at stake. What may be at stake is the function that you play. I think this is a positive message. Think of it this way: We're buying services that can be provided through the private sector. What we want our workers to do are the value added, challenging, exciting things that the Intranet really brings to us. When we are able to seamlessly communicate across the Navy and Marine Corps, we

can build programs, processes and portals to give our people the kind of information they need. That is where we'll need our IT workers. A second question I'm asked regularly is: "If I'm not an IM/IT worker, will NMCI impact my life?" The answer is yes, for the better. This new tool will provide the ability to communicate across the Enterprise, collect data and turn it into knowledge and reach back from the battlefield. These added capabilities will be at your fingertips to make you a more productive worker. The future prospects are, for us, an invigorated workforce performing higher value-added functions and a clearly stronger Navy and Marine Corps because of NMCI.

Approach

NMCI requires a whole new approach to how we think about the way we communicate and operate. It requires the acquisition team to think differently. It requires the Chief Information Officer to think differently. It requires the Secretary and me to reframe how we will approach a major problem. The powerful thing is that we are teaming up in a new fashion to make this a success. We are reaching out to Congress. We are reaching out to the nation. We are joining together as a group, sharing information, working to make this happen.

To each of you who is helping us along the way, I want to say thank you very much. It is a powerful statement to America of what the Navy/Marine Corps can do to ensure we have a strong fighting force well into the 21st century.



Announcing the Department of the Navy ★ Knowledge Fair ★

1 August 2000 ★ 9:00 - 2:30

at the Crystal City Hyatt Regency Hotel

2799 Jefferson Davis Highway

Arlington, Virginia

The Navy and Marine Corps are making great strides towards becoming knowledge-centric. The Knowledge Fair showcases the substantial progress that has been made throughout the Department.

Over 40 displays will demonstrate successful knowledge management projects. This is an excellent opportunity for information sharing and collaboration, making valuable contacts and discovering how knowledge management initiatives are adding value across the Enterprise.

Sponsored by the DON Chief Information Officer and the DON Knowledge Management Community of Practice.

Government employees and government contractors are invited to attend. For more information contact CAPT James Kantner at (703) 601-0047 or e-mail kantner.james@hq.navy.mil.





In 1899, the Navy tested its first wireless radio afloat. Shortly afterward, radios were installed in warships and shore headquarters. Not all liked it initially, but some forty years later, radio communications held together amphibious and carrier operations during World War II.

A century later, the Naval services are taking another big step. We will soon establish a Navy Marine Corps Intranet that will digitally connect all bases ashore and be linked to deployed ships. It, too, portends big change. In the near term, this intranet will help a Navy-Marine Corps team operate faster, better and cheaper. Ultimately, it may enable the unforeseen.

Like it did with the radio, the Navy has demonstrated the operational potential of digital communications. By networking all forward-deployed ships, Information Technology for the 21st Century (IT-21) enabled a small staff on a destroyer to coordinate other ships' missile strikes into Kosovo. In the Arabian Gulf, it speeded command and control in maritime interdiction. As one ship commander stated, "IT-21 revolutionized daily operations within the battle group."

The purpose of the Navy Marine Corps Intranet is widening the digital information flow. It will replace the multitude of incompatible networks that impede digital information flow among shore commands, and be linked to deployed ships. This department-wide network will provide voice, video and data to all Sailors and Marines.

"It is clearly the transformative technology of our period," states Secretary of the Navy Richard Danzig. This Intranet will continue the IT-21 revolution. It will give forward-deployed forces ready access to maintenance, logistics, medical and personnel data within the supporting establishment. It will speed interactions between shore commands, enabling a revolution in business affairs. It will provide a more secure network, eliminating over 200 gateways, which are vulnerable to cyber attack.

How we are doing this is important. The Department of the Navy is taking the money it spends on some 100 networks and

using it to pay for the Navy Marine Corps Intranet. Essentially, it's purchasing a utility. A corporate team will build, maintain and provide everything associated with it. That's what many corporations do. Government agencies like the Commerce Department; Bureau of Alcohol, Tobacco and Firearms; and NASA, are also outsourcing their network support.

This approach has several benefits. The intranet will be the responsibility of commercial industry, where the real strides in Information Technology are being made. The contractor will also provide technology "refreshes." We'll be able to keep up with Information Technology that changes every 18 months, without being hampered by government procurement practices. The bottom line: it's a better service for the same money.

Like the radio, the Navy Marine Corps Intranet will affect how people work. While overall this change will be positive, some network administration, operations and ashore communications functions may be displaced. This initiative's intent is not to cut personnel performing these functions. Information workers are in high demand both in the public and private sectors.

The Department of the Navy seeks to mitigate any adverse effects by emphasizing local flexibility. In many cases, local network services are already performed by the commercial sector – as will be the case for NMCI. Only a portion of the NMCI services are mandatory in initial implementation. The mandatory set was established as the minimum necessary to ensure security and interoperability. Local activities can pace the transition impact based on their local situation. For example, if a local activity has a large number of IT professionals, they can choose to maintain their legacy software and mainframe systems with in-house people and transition this support to the NMCI contract as people move on or are retrained and reassigned to higher priority work.

Those seeking to continue work in network operations will be given priority for job placement with the NMCI service provider. The NMCI contract gives "right of first refusal" – those individuals currently performing functions that are transitioning to the private sector must be considered first by the contractor. Industry experience indicates that as much as 60 percent of the in-place workforce might take advantage of such an offer. Those government employees choosing to transition to the private sector may also be afforded certain benefits.

To ensure thoroughness, the Department of the Navy has asked Jefferson Consulting to look closely at the transition issue. The study will identify geographic locations that might be more adversely affected than others. It will also determine job opportunities and best transition practices. Additionally, the study will help ensure that all areas receive equal transition assistance.

"Change is the law of life," as John F. Kennedy once said. Whether it's changing to the radio or the Navy Marine Corps Intranet, it's always hard work. Just like the radio, the Navy Marine Corps Intranet can help us become a better Navy-Marine Corps team.

⇒ Cipriano is the Program Executive Officer for Information Technology.

NMCI: The Possibilities

This is what NMCI-enabled Knowledge Management looks like... bringing the knowledge of the Department to the tip of the spear.



Out on the USS SAN JACINTO, Petty Officer Storm has run into a problem with a winch motor. Last year when experiencing the same problem he had to wait until the next port visit to get repairs done. With the advent of the Navy Marine Corps Intranet, he quickly hops to the computer, pulls up Microsoft Net Meeting, and within minutes via satellite has direct access to a TeleMaintenance expert at the Naval Surface Warfare Center in Crane, Indiana. During the next 20 minutes, while viewing equipment blueprints on his computer screen, he learns how to effect repair. Through connectivity and good knowledge management, he solved his problem within the hour.

While forward-deployed, GySgt. Jackson detects unusual patterns on his detection device, indicating the possible presence of a biological agent. He reaches back to the Centers for Disease Control in Atlanta for advice, and via his computer transmits the information from his biological agent detection device. Using Knowledge Management systems, historical and other extant data are quickly processed and analyzed to determine the threat level. The GySgt. is immediately linked to Fort Dietrick, Maryland for appropriate procedures, which are downloaded to his laptop. Simultaneously, the Joint Command Center is alerted and nearby platoons are warned of possible biological attack.

Seaman Nottingham expects his first child in April. In early March on deployment in the Indian Ocean, he receives an urgent message that there are complications and the baby must be delivered immediately via C-Section. As the potential father reads information from Virtual Naval Hospital and researches the procedure via Internet, he is beside himself with worry. Shortly after a successful birth, the XO sets up a video teleconference with Bethesda Naval Hospital and Seaman Nottingham's wife introduces their new daughter.

NAVSUP One Touch Support

"A single action by the customer activates a global network of resources that delivers best value products and services."



Navy and Marine Corps personnel are finding it much easier to search for critical supplies and repair parts, check the status of requisitions, or obtain logistics assistance thanks to NAVSUP's Web-based One Touch Support system.

One Touch requires only one password (a digital certificate) that can be applied for online. The Web site – www.navsupsup.navy.mil/onetouch – connects users to several supply and logistics databases through a single entry point. When ordering new items the system automatically routes the requisition to its appropriate database, saving time and resources.

For additional information about One Touch Support:

- ◆ Customer Information Center
1-877-41TOUCH
- ◆ Program Manager, Mr. Tom Wekluk,
717-605-6791

Paying for Network PERFORMANCE

Service level agreements can free agency telecom managers from playing perpetual catch-up with network technology

By Heather Hayes

For some time, federal agencies have been chanting the new contracting mantra: “results not resources.” The trend - assigning accountability for various information technology services to one vendor - began with desktop outsourcing, or seat management. Now it is extending to end-to-end networks that encompass “last mile” connections, right down to the local-area network, router and desktop.

To keep tabs on such arrangements, federal agencies have begun using a relatively new performance-based contracting tool known as a service level agreement.

“SLAs have emerged as a method for making a transition from a government-owned and -operated environment to a purchased-service environment,” said Warren Suss, president of Warren H. Suss Associates, a consulting firm in Jenkintown, Pa. “As such, it gives agencies a way to establish a comfort level as they move to an environment where a vendor is taking care of things that the government has traditionally performed.” Of course, today’s telecommunications environment is far removed from the market of the late 1980s, when the government often acted as its own telecommunications provider. The reality of the fast-moving 1990s marketplace quickly changed that mind-set, with the government moving toward contracting out dial-tone and then long-haul service. However, most agencies continued to take a piecemeal approach and buy from multiple vendors.

Now, a further shift has taken hold, with agencies buying frame-relay, Asynchronous Transfer Mode (ATM) and managed network services from a single telecommunications provider who can do it all - and do it efficiently and effectively.

“The federal government is really recognizing that they don’t have now, nor are they going to have, the expertise to deal in the world of telecommunications on any level,” said Dave Bittenbender, director of network services for Computer Sciences Corp.’s federal sector in Falls Church, Va. “Things are moving too fast to keep up, and as agencies slim down, one of the areas where budget cuts have hit hardest are in the administrative parts of an organization, which is where the telecommunications shop normally fits.”

Frank Lalley, assistant commissioner for service delivery for GSA’s FTS 2001 contract, agreed. “Many agencies just can’t afford the number of talented people that it takes to manage an end-to-end network, so you have to rely on professionals to do it for you,” he said.

The SLA, which gives agencies a tool to spell out services they want along with the level of quality they expect, is the linchpin of such hands-off contracts. In some ways, SLAs have been around for years in the form of requirements laid out in a statement of work. The new SLA ups the ante of those contracts by including terms that financially reward or punish a vendor based on performance and customer satisfaction.

The use of the new contracting tool is being driven by new legislation, such as the Government Performance and Results Act and the Clinger-Cohen Act of 1996, both of which were designed to link money with agency performance. Two market factors are also at work: the trend toward e-business, and the availability of new network management and measurement tools that can accurately assess service delivery.

“These reporting capabilities can directly link the performance of the IT infrastructure to the level of services,” said Richard Ptak, vice president of systems and applications management for the

Definition of a service level agreement

A service level agreement is a contracting tool keyed to a client’s service performance expectations. The buyer and seller determine upfront which specific services and performance levels will be provided, as well as the metrics by which those capabilities will be measured. Meeting or beating those expectations earns the provider a financial reward; failing to meet expectations results in earning less money for that performance period.

Hurwitz Group Inc., an IT research firm in Boston.

In practice, service-level metrics are set up ahead of time for each requirement. An SLA for network availability would typically require a specific percentage of network uptime. Other criteria might include network performance (including network latency); network reliability (measured during the course of a month or a year rather than daily); service availability intervals (involving the installation of service on time); mean time to report a failure; message delivery time; the number of trouble tickets closed; time to complete moves, adds or changes; voice services; multi-media capabilities; and user training.

Each criterion would generally have three grades of service - high, medium and low - and be priced accordingly. A high network availability guarantee of 99.9 percent uptime, for instance, would cost more per user than a low network availability of 99.5 percent uptime.

Making a Federal Case

For agencies, the use of SLAs in end-to-end telecommunications contracts offers several benefits, not the least of which is the stress relief that comes with handing over responsibility to a third party and being able to concentrate on the agency's core mission. SLAs also promise huge long-term budget savings, as well as the ability for agencies to work on the latest equipment without costly procurements or large upfront capital expenditures.

"What it all means is [that] somebody else gets to worry about upgrades and refresh rates, about what needs to be done to maintain the service and keep the infrastructure up to where the commercial market is going," said Joe Cipriano, the Navy's pro-

gram executive officer for information technology [for Navy Marine Corps Intranet], a planned 350,000-seat end-to-end solution for voice, video and data. "We want to let the experts do that for us in the most cost-effective way and let us concentrate on what to do with the information and how to make better decisions faster with the information."

The benefits are so strong that the Navy had few doubts about buying services rather than piece parts when it came time to design its new network. Not only will the massive solution - set to be awarded later this spring - use SLAs to keep track of the vendor's performance, but the contract is truly end to end, extending from regional and long-haul communications systems right down to the local-area networks and desktop PCs inside buildings.

"It's kind of like buying a utility, like buying electricity," Cipriano said. "We estimated that if we were to go out and buy all the stuff we needed to upgrade our base networks, our desktop computers and our software packages to make them all interoperable and secure and to bring them up to the performance level that we needed with our new efficiency initiatives, we were going to need an upfront investment of \$2 billion to \$3 billion, plus significant ongoing operation and maintenance costs. We just didn't have that kind of money."

FTS Services

Although the Navy/Marine Corps Intranet has been the most high-profile end-to-end telecommunications contract, it's not the only big telecom system relying on new services and SLAs. FTS 2001, which offers long-distance voice and data services to federal agencies, recently added managed network services to its repertoire and replaced its standard grade of service with various grades of service, according to Lalley.

CASE STUDY

Navy defines its expectations

When the Navy decided to create its 350,000-seat Navy Marine Corps Intranet as a service rather than a mere network, it faced a huge internal problem: identifying and capturing the requirements of thousands of users across two large organizations.

"It's tough," said Joe Cipriano, the Navy's program executive officer for Information Technology. "But we had from the very top leadership the belief that this was fundamentally necessary to keep the Navy in the forefront of the Information Age. That kind of strong commitment is critical to overcoming the cultural resistance that

is typical of a major change like this."

To ease the process, Cipriano and his team insisted on strong involvement from representatives of various Navy and Marine Corps user groups from the beginning. The users met regularly to hammer out the answers to a number of specific questions: What features were necessary? How much was each one worth to each user group and to the Navy as a whole? How much could the Navy afford to pay per seat for such a service based on its current costs? What services should be standardized, and which ones

should be optional? What incentives should be offered to encourage the vendor to be most responsive to the needs of the end users?

Team members and focus groups also organized themselves into work teams and used Web-based collaborative tools to share all of the information among a large group of officials and end users. "There was a great deal of visibility given through these Web-based tools, so there were many, many opportunities for involvement for just about anybody who wanted to give their input in the development of the requirements,"

Cipriano said. "All of this just really helped everybody get comfortable with the idea that their needs were going to be addressed and met."

Once the Navy Marine Corps Intranet is in full swing, Cipriano plans to keep his users involved by having them fill out quarterly customer satisfaction surveys on everything from network speed to how responsive the vendor is to trouble tickets. If the results turn out well, the vendor could earn as much as 10 percent above the monthly service fee per user in additional profit.

The contract has also included a system of financial rewards and punishments to motivate its two vendors, Sprint and MCI WorldCom. Meanwhile, GSA is using SLAs to set formal service expectations for its Metropolitan Area Acquisitions (MAA) program, which provides local voice and data service in several cities, and WITS 2001, a \$1 billion contract to offer local voice and data services to federal agencies in the Washington, D.C., area.

Such changes are a sign of the times, said Judy Stevens, manager of proposal development for Bell Atlantic Federal, which recently won the WITS 2001 contract and an MAA awarded for Buffalo, N.Y. With the original WITS contract, GSA owned the switches, and Bell Atlantic was involved only in the operation and maintenance of equipment. "Now, they're interested more in service than ownership and that's why we're seeing a little more definition on the service-level requirements," she said. "Which is a good thing, because they are much more detailed about what they expect and we know and they know upfront exactly what those expectations are."

The FAA is also getting into the SLA game in its FAA Telecommunications Infrastructure program. The agency wants to move from paying for telecommunications services per line and owning some telecommunications assets to a strategy of hiring a service provider to manage and own the infrastructure at the lowest cost.

"Ultimately, what we expect to be procuring over time are service categories," said Peter Challan, FAA deputy associate administrator for air traffic services. "On the other hand, the architecture on which that rides is real important to us."

Getting It Done

Like just about any other contracting strategy, an SLA is only as good as the time and thought put into it. And it does take plenty of both, especially in the telecommunications arena, according to Suss.

Pros and cons of service level agreements

Pros:

- A service level agreement gives both government agencies and vendors a baseline by which to measure performance and a way to determine whether the service contracted for is being delivered.
- Because a prime contractor is accountable for the whole system, the blame game that often takes place between an agency and contractors is eliminated. The prime simply finds the problem and fixes it.
- Payment can be tied to service quality and customer satisfaction.
- Vendors have strong financial incentives to operate at maximum efficiency; vendors that perform above expectations earn as much as a 10 percent bonus on their monthly fee, while vendors who fail can be docked payments.
- Upgrades to the system are done on a scheduled basis at no additional cost to the government.
- Once the contract is in place, agencies can expect a level payment stream based on operating costs rather than capital expenditures. That allows officials to better manage and forecast their telecommunications budget.

Cons:

- Service level agreements are often accompanied by a perceived loss of control.
- It may be difficult to get disparate user groups to agree on requirements.
- Agencies sometimes pay for a higher level of service than is necessary for some employees, though the cost savings inherent in the model usually balance out this potential disadvantage.

"It's very difficult to pull together a sort of unified approach to acquiring telecommunications services, because you have so many different entities that basically have control of different pieces of it today and you have different financial resources," he said. "It's not an easy transition."

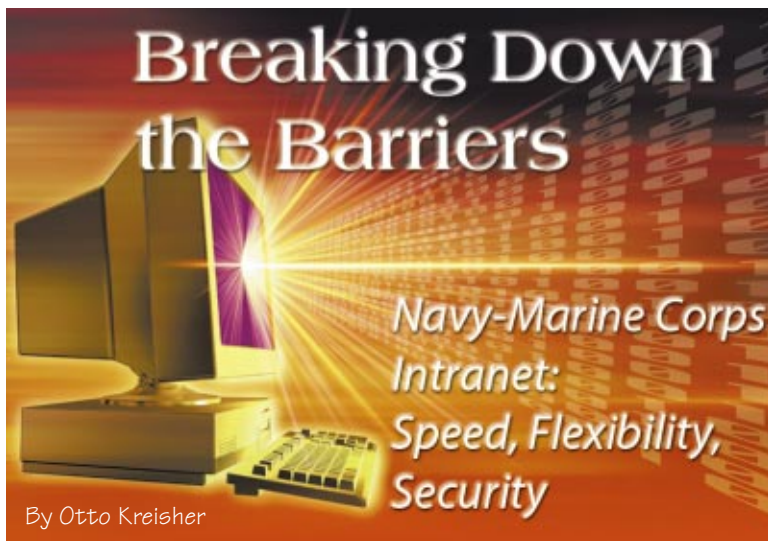
What's more, there are plenty of challenges involved in rounding up the networking needs of thousands of users and summing them up into a few specific requirements.

"In doing our research, everybody told us that you only need a small number of specific SLAs to drive the service, like maybe 5 to 15 total," Cipriano said. The Navy is still working on narrowing its list, having started at 200 and gotten down to only 37 SLAs. "Doing that requires the involvement of a broad range of people from all functional areas that are represented within the organization."

Another challenge is finding performance metrics that can be measured properly. In taking up this issue, the Navy looked at what companies in the private sector were measuring and what kinds of tools and techniques they were using. "That gives you a good starting point," Cipriano said. However, some criteria are not easy to measure. For instance, some Navy SLAs that cover security use brand-new measurement techniques that had to be invented and tested by Navy personnel.

But the most important task that needs to be performed upfront has less to do with research and technical questions than with basic government culture. "Agencies really need to change their view of the contractor," Bittenbender said. "You really have to go into a performance-based relationship with the understanding that you're both in it together. You have to get rid of this arm's-length partnership. If you do that, the chances of success are much, much greater."

⇒ Hayes is a freelance writer based in Stuarts Draft, Va.



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The Navy and Marine Corps have been preparing for the 21st century by developing an Information Technology (IT) system that will tie together all their bases and commands in a single high-capacity network. It will provide unprecedented speed, flexibility and security for online communications and other IT.

The network, called the Navy-Marine Corps Intranet (NMCI), will be one of the largest and most expensive IT projects ever - serving nearly 300 commands and bases at a cost an industry expert said could exceed \$15 billion.

The project's program manager at the Navy's Space and Naval Warfare Systems Command said that the Navy expects to complete the contract process for the massive and complex project in an unimaginably short time making it the "poster child" for the revolution in business affairs. The impetus for the sweeping project, said Joseph Cipriano, the Navy's program executive officer for

Information Technology, is the realization that "in this information world, we find that the speed of decision-making is directly related to how quickly you can access information."

The performance and survival of organizations "has always depended on how quickly they can make decisions - that has certainly been true of war fighting, and it is true in business as well," Cipriano said in an interview. "What NMCI does is break down some of the barriers that have been in place that keep people from getting the information when they need it," he said.

Personnel Benefits

While the planned intranet offers Navy and Marine leaders a quantum improvement in their ability to make both war fighting and business decisions, it also will provide major benefits to the individual Sailor and Marine. "They will have information at their fingertips on pay and benefits ... [as well as] instant access to training so they can advance in rate [and] do their jobs better," Cipriano said. With the same system and equipment in use throughout the Navy Department, Sailors and Marines will not have to learn a new process each time they change duty stations. They also will find instant help to resolve any problem on the intranet because

the system's contractors will be required to maintain the network and ensure continuous data flow.

"And they will be able to talk to family and friends easily from almost anywhere in the world, without some of the problems we have now," Cipriano said, referring to the limited e-mail and video message capability now available on some ships and at a number of shore activities.

A key problem the new intranet must overcome is that the current IT system consists of many separate networks serving the Navy's major systems commands, the supply system, individual bases, and local areas, according to Vice Adm. Robert J. Natter, deputy chief of naval operations for plans, policy and operations.

The current system is inefficient and impedes the sharing of information among the various Navy Department entities, Natter told representatives of about 250 IT firms at a 7 July 1999 industry briefing. These multiple and dissimilar networks require extra resources to operate, maintain and integrate; operators and technicians, he said, must therefore be trained on multiple system designs.

Another major concern, Natter said, is that there is "inadequate security" for some of the Navy's current networks. The differing levels of capability, and of security, in the existing IT systems "drive network operators to the lowest common denominator," he said.

An Enterprisewide Solution

Secretary of the Navy Richard Danzig said that the Naval services' "commitment to Network Centric Warfare, sound investment practices, information assurance and the revolution in business affairs demands that we rapidly address these interoperability problems on an enterprisewide basis." The solution to those and other problems, Cipriano told the industry group, is "a Department of the Navy enterprisewide network capability that provides end-to-end, secure and assured access to the full range of voice, video and data services."

The NMCI will be an integrated system that improves work, training and quality of life for every Navy and Marine Corps service member and civilian employee, permits rapid technology upgrades, provides increased capability at equal or lower cost, and ensures enhanced security, Cipriano said.

The new intranet will unite all Navy and Marine Corps base and local area networks and other IT nets within the continental United States and Hawaii and connect them to the fleet through the teleport on each ship, he said. Compatible high-performance equipment aboard ship will be provided under the IT-21 (Information Technology for the 21st Century) program, Cipriano told Sea Power. The NMCI also will be linked to the rest of the Defense Department and to the nation's regional commanders in chief through the Defense Information Services Network, Cipriano said.

NMCI "will do for our shore establishment what IT-21 is doing for our afloat forces," said Chief of Naval Operations Adm. Jay L. Johnson. "It will provide improved Information Technology to all

Naval activities and help us move toward more effective support for our networked warfighting forces."

Marine Corps' Goals

For the Marines, the new intranet will support a "seamless information continuum" that will extend "from the supporting establishment to the fighting hole," Brig. Gen. Robert Shea, assistant chief of staff for C4I (command, control, communications, computers, and intelligence) at Headquarters Marine Corps, told the industry group. It must provide "plug-and-play interoperability" in all environments, Shea said, including joint and coalition operations; it also must be flexible enough, he said, to handle conditions ranging from peacetime operations to major theater war, and be able to quickly adapt to emerging requirements.

NMCI contractors must provide special "ruggedized laptops" for some Marine units, Cipriano said, because "the Marines take their PCs with them when they deploy—the same computers they use in garrison they will use on the ship, and also in the field when they land." The bottom line, officials said, is that the NMCI "must be a force multiplier that enables Marines and Sailors at the tip of the spear to accomplish their mission."

Improved information security is another key requirement of the new system, the program officials said. It must allow Navy Department personnel "to share knowledge worldwide with those who need it, when they need it, and with no one else," Natter said. Protecting crucial information could be a major challenge because the program envisions that one network will carry everything from the personal e-mail messages of service members to highly classified intelligence data, combat orders, and wartime decision-making video conferences among officials.

The bidding contractors can decide how they will provide the required security, Cipriano said. They may decide to provide separate channels for secure and unclassified data, or to encrypt the classified information, he said. "We find our security concerns are not that much different from what banks, stock exchanges, and others

that use the internet have," Cipriano said.

December 2001 IOC

Despite the scope and complexity of the NMCI project, the transition to the new intranet must not interrupt department operations, Navy officials told industry.

Cipriano said the Navy hopes to award a contract by this June, just over a year from the first approach to industry, with initial operational capability targeted for December 2001.

To execute a contract of this size in that time—a fraction of the normal decade-long

The bottom line, officials said, is that the NMCI "must be a force multiplier that enables Marines and Sailors at the tip of the spear to accomplish their mission."

so fast." Because the project team spent a great deal of time talking to business officials who buy similar services, the NMCI request for proposals (RFP)—released in December—is not like the usual Pentagon procurement RFP, Cipriano said. "It's performance-oriented. It's fixed-price." The Navy is telling prospective contractors that "you don't get paid until you provide the service," he said.

The contract also will be based on "best-value" considerations—which means that bidders could trade off some of the proposed requirements for a lower cost, Cipriano said. "We haven't had anyone tell us it can't be done," he noted.

"It's huge," said Michael Kush, the defense-sector director for the Government Electronics Industry Association's annual survey. "It definitely has an element of complexity," he said, but the industry is convinced that "it is absolutely doable." Kush estimated the potential cost at \$15 billion or more over the life of the contract, which runs for five years with an option for three more.

Pentagon procurement cycle—the Navy will use "the commercial method," Cipriano said. "By DOD standards, it's very fast. By commercial standards ... it's not

The contract also will be based on "best-value" considerations—which means that bidders could trade off some of the proposed requirements for a lower cost, Cipriano said. "We haven't had anyone tell us it can't be done," he noted.

Minimal R&D Required

Another reason why the Navy can expect the project to be completed so quickly, Cipriano said, is because there is little if any research and development required. "We are not asking for anything that doesn't exist today—that isn't off the shelf. So all we are asking them to do is put a lot of stuff together, to package it and ... then deploy it in a lot of places."

Another unusual aspect of the contract is that the Navy is not buying any of the equipment that will be needed to make the NMCI work. Instead, Cipriano said, "we are buying services, like a utility. ... We are saying we want 0s and 1s to go from point A to point B; we don't want to own the infrastructure that carries them. It's just like buying electricity or buying telephone service."

The department also will not have to worry about upgrading the system when the technology improves, because the NMCI contractors will be responsible for periodic "technology refreshing." That will allow the department to keep up with the rapid advances in IT technology, which it cannot do within the normal Defense Department procurement cycles, Cipriano said.

The Navy and Marines also want to significantly reduce the number of technicians needed to operate and maintain the system, "because it's not our core business to that," he said. In short, the Navy wants "to get ourselves out of the network-operation and maintenance business, and into the information

business." The RFP to industry provides wide flexibility in how bidders provide the required services. All that the department is concerned about, Cipriano said, is getting the necessary quality and quantity of reliable and secure information services.

"We will pay ... [the contractors] based on the service, just like you pay a monthly bill for cable TV," he said.

⇒ Kreisher is the national security reporter for Copley News Service.

Teaming Up for Implementation



NMCI is the underpinning for quantum improvements in how the Navy and Marine Corps will live, work and fight in the 21st century.



By LT Dora U. L. Staggs, USN

The Department of the Navy's Navy Marine Corps Intranet (NMCI) is a strategic approach that will enable the entire Department to effectively communicate in the modern age. Because the Department currently operates over a hundred different data and communications networks that are locally administered, system incompatibilities and restricted access hamper enterprise-wide communications. The Navy recognizes that intranets have become major communications tools and understands the value of a unified network organized and managed at the Department level. The NMCI will afford significant improvements in overall capability, connectivity, security and effectiveness of our information technology (IT) systems. Through a single service contract, NMCI will provide end-to-end connectivity for all Navy and Marine Corps personnel with voice, video and data services.

Since the DON embarked on this initiative, many organizations have been working together to address the issues associated with implementing this strategic capability. In April, the Secretary of the Navy designated the Department of the Navy Chief Information Officer (DON CIO) as the lead for the NMCI initiative. Under the direction of the DON CIO, an NMCI Action Team was established to support the NMCI strategy (see box at right).

These teams identify and address key issues associated with implementing NMCI. They explore specific issues such as the opportunities and impacts on military and civilian personnel, funding requirements, and potential individual, organization and enterprise content that will reside on NMCI.

Mr. Daniel Porter, DON CIO, credits the Action Team for working closely together to meet this challenge. "The teamwork has been incredible," Porter said. "Teams within the Navy and Marine Corps claimancies are putting tremendous energy into this important Enterprise initiative."

Mr. Joseph Cipriano, PEO-IT, emphasized that this is an innovative procurement approach, in that services, rather than products, are being purchased and that the Department will rely on the industry experts to build, maintain and update shore-based IT services. Those services will be acquired through a multi-year contract. The Department has been working with industry since last summer to develop the procurement approach to NMCI. "We asked industry to build, maintain and refresh an intranet service for us," Cipriano said. "We asked industry to give us a best value

The Action Team consists of members from the following organizations:

- ◆ Program Executive Office for Information Technology (PEO-IT)
- ◆ Deputy Assistant Secretary of the Navy (C4I/EW/Space)
- ◆ Assistant Chief of Staff, Command, Control, Communications, Computers, and Intelligence, Headquarters Marine Corps
- ◆ Director, Space, Information, Warfare, Command and Control, Office of the Chief of Naval Operations
- ◆ Commander, Space and Naval Warfare Systems Command
- ◆ Deputy Assistant Secretary of the Navy (Civilian Personnel/EEO)
- ◆ Director, Office of Budget/Fiscal Management
- ◆ Auditor General of the Navy
- ◆ Naval Inspector General
- ◆ Chief of Legislative Affairs

bid and to suggest ways we can lower costs." This partnering allows industry maximum flexibility to propose a best value solution.

NMCI is the foundation that will enable DON-wide Web-based processes, Knowledge Management and e-Business solutions. With NMCI, the DON will gain greater efficiency and effectiveness in all facets of Naval operations and become a relevant, current and highly sophisticated player in the new digital economy. NMCI is the underpinning for quantum improvements in how the Navy and Marine Corps will live, work and fight in the 21st century.

⇒ LT Staggs is a Navy Public Affairs Officer working in the Navy Office of Information.



A Case for Navy's Intranet



By Marv Langston

Richard McGinn, chief executive officer for Lucent Technologies said, "You either move with speed or you die." To do that, most companies use enterprisewide intranets, which enable workers to act quickly as individuals but with the added insight and knowledge of a team.

Generally, the federal government has done little to take advantage of intranets. Too many agencies are conglomerations of incompatible networks. But the Navy will soon be an exception. The contract will ask commercial industry to build and maintain an enterprisewide intranet. It's what good government should do. But it's also an example of why innovation in government is so difficult.

The Navy learned the value of enterprisewide intranets from business years ago. IBM Corp. consolidated 31 networks into one, saving \$2 billion annually, and J. P. Morgan and Co. successfully outsourced its information services.

We realized the wisdom of what a Ford Motor Co. executive said, "If you don't have a collaborative network set up, you're going to be at a competitive disadvantage."

The Navy is now pursuing a Navy Marine Corps Intranet (NMCI). It will link all shore commands and ships, providing voice, video and data services. That's a vast improvement over present networks that do not even permit e-mail between some commands.

In the Information Age, you wouldn't think this would get a hassle. Not so. Some claim the Navy doesn't have the money for this initiative. But the Navy is paying for it with funds spent on all the service's different information networks. It's the same money buying a better service.

Some say the Navy should have started smaller – but it did. In 1997, the Navy kicked off the Information Technology for the 21st Century program, which connects with networks all forward-deployed ships. It will be on eight carrier battle groups and amphibious-ready groups by the end of 2000. The idea is to expand the networks so that ships can reach back to shore commands and get immediate access to more medical, maintenance, training and administrative support.

Some argue this is risky business. But the intranet will be built and maintained by the real experts in Information Technology: commercial industry. They'll upgrade it as new technologies hit the street. They buy information services like a utility. Government is doing it, too. San Diego County, the state of Connecticut, NASA and the Commerce Department all outsource enterprisewide intranets.

Still, some say the Navy didn't mitigate the risk enough. But it solicited commercial industry for its best ideas, and users from across the department voiced their needs. Technical experts collaborated on interoperability. Senior leaders considered how to buy it. Arguably, the Navy has prepared better than any other agency.

Critics of NMCI should be mindful of a Chinese proverb: "Those who say it cannot be done should not interrupt the person doing it." They only make a necessary job harder.

⇒ Langston was formerly Deputy CIO for the Defense Department. He is now chief operating officer at Salus Media.

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NMCI and Network Security

By Major Roddy Staten, USMC

Information Warfare/Information Assurance

The Navy Marine Corps Intranet (NMCI) will deliver comprehensive, end-to-end information services for non-tactical networks ashore through a common computing and communications environment. In accordance with Department of Defense (DoD) and Department of the Navy (DON), Information Assurance (IA) policies and procedures, the NMCI network security architecture must be capable of protecting the Intranet's information systems and information content. This includes executing IA mechanisms to implement these security services and conducting vulnerability assessments to validate that the necessary controls are in place to satisfy NMCI information assurance requirements.

The DON did not dictate a specific security architecture for NMCI due to the belief that a forced solution would have unnecessarily impeded industry's exploration of innovation in this area. However, because NMCI provides services critical to accomplishment of the DON mission, network design associated with information assurance is subject to strict compliance with DoD/DON security policy, government approval of IA products and computer network defense (CND) operations. The NMCI Solicitation and attached documents, located at <http://www.contracts.hq.navy.mil/nmci/>, provides a detailed description of the NMCI security requirements, policy and procedures. NMCI network security strategy and policy is highlighted within this article in order to provide insight into an evolving process.

High-Level Network Strategy

Recent denial of service and computer virus attacks along with the inability of any one specific defense to stop these attacks indicates that a multifaceted, integrated system network security defense is needed. In order to address this requirement, NMCI will employ a defense-in-depth strategy to mitigate the risk associated with a single point of failure. Available protection technologies will be employed in a layered system of defenses. To this end, attacks directed against systems within NMCI's defined network boundaries will be met by a series of protection mechanisms including, but not limited to, encryption, intrusion detection systems, access control, user identification and authentication, malicious content detection, audit, physical and environmental controls. Use of these mechanisms will mitigate inherent system vulnerabilities and counter potential threats. The number and type

of defense mechanisms used in each boundary layer is a consequence of the protective qualities of the device and the assigned value of the information within the protected enclave. Chapter 3 of the DON CIO Information Technology Standards Guidance (ITSG) and Appendix E of the DON CIO Information Technology Infrastructure Architecture (ITIA) provide a more detailed description of the defense-in-depth strategy employment.

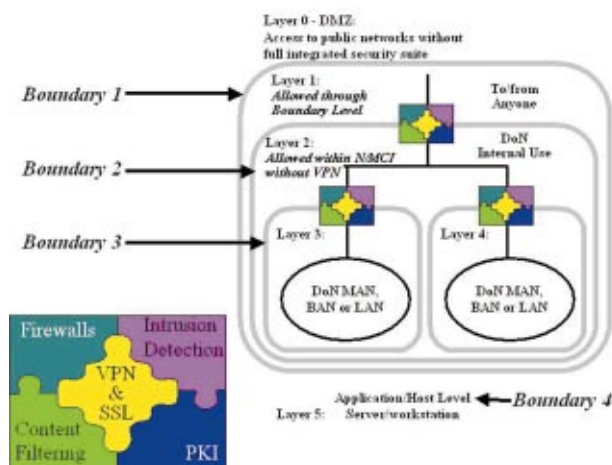


Figure 1: NMCI Defense-in-Depth Strategy

NMCI Security Policy

The NMCI network security policy will essentially be a compilation of DoD and DON information security policies. This will ensure the new network's compliance and compatibility with existing and proposed DoD network architecture and operational procedures. The proposed security policy will support the five fundamental information assurance elements (confidentiality, integrity, availability, authentication and non-repudiation) and establishes how the NMCI will manage, protect and distribute sensitive information. Who is authorized to manage what information as well as where and how that information may be stored, handled and distributed are all areas addressed by the NMCI solicitation security policy and requirements documents. Two important policy categories that provide a large portion of the operational policy direction are Computer Network Defense and Certification and Accreditation. A more detailed description of the NMCI Security Policy is available in Attachment 5 of the NMCI Solicitation.

Computer Network Defense (CND)

NMCI security services will use CND initiatives such as Information Operations Conditions directives, and Information Assurance Vulnerability Alert notices, to ensure synchronization with existing DoD and DON CND processes. Authorized DON personnel will perform critical security roles, to include exercising essential command authority over DON defensive Information Warfare (IW) activities. Along this line, the DON command structure shall retain directive authority over all NMCI threat responses. Implementation of NMCI shall be consistent with current DON computer incident reporting guidelines. Also, network availability and security information from the entire NMCI shall be made available to the DON components of the DoD Joint Task Force for Computer Network Defense (JTF-CND) so that analysis can be performed across regions and network defense strategies can be coordinated across the DON.

DoD/DON *red teaming* will be used in the form of design, product and configuration reviews. The red teams will be composed of parties independent of the NMCI contractor and under government leadership. Authorized simulated attacks against operational NMCI networks will be a critical factor in determining compliance with government performance metrics and both DON and DoD network security requirements.

As an interesting note, in order to focus continued high level attention on information assurance, the government will perform unannounced information warfare on the service provider network and reward performance against electronic survivability service levels. The maximum for this incentive is \$10 million per year. The specific amount will be determined through an incentive board. At the end of each six-month evaluation period, the

contractor shall submit data that supports its proposed incentive amount (not to exceed \$5 million) for that period.

Certification and Accreditation

In accordance with specification in DoD Directive 5200.28 (Security Requirements for AIS), DoD Instruction 5200.40 (DoD Information Technology Security Certification and Accreditation Process - DITSCAP), and DoD 5200.28-M (ADP Security Manual), all NMCI automated systems shall meet fundamental security requirements. To ensure compliance to this direction, Designated Approving Authorities (DAA's) supporting NMCI must accredit automated systems (based on implementation of proper products, policies and procedures), before the processing of classified or sensitive non-classified data. The NMCI contractor will be responsible for achieving accreditation in accordance with the final specifications of the NMCI contract.

Conclusion

The network security architecture developed by the NMCI contractors, in partnership with the government, must protect all network information, services and infrastructure against unauthorized modification, destruction or disclosure. The network security strategy and IA practices described in the Navy Marine Corps Intranet (NMCI) Solicitation provide a basis for this design. Successful planning and execution of network security, as described, is considered necessary to providing assurance that NMCI will perform critical network functions correctly and without harmful side effects.

⇒ Major Staten is Assistant for Marine Matters (Information Assurance) for CNO OPNAV N643, and CNO OPNAV N64 Liaison for NMCI Information Assurance.



www.mol.usmc.mil

Marine OnLine is a Web-based architecture developed by the Marine Corps' Total Force Administration System (TFAS). The Marine OnLine service provides personnel administrative information to all echelons of the Corps, from the individual Marine to Headquarters Marine Corps.

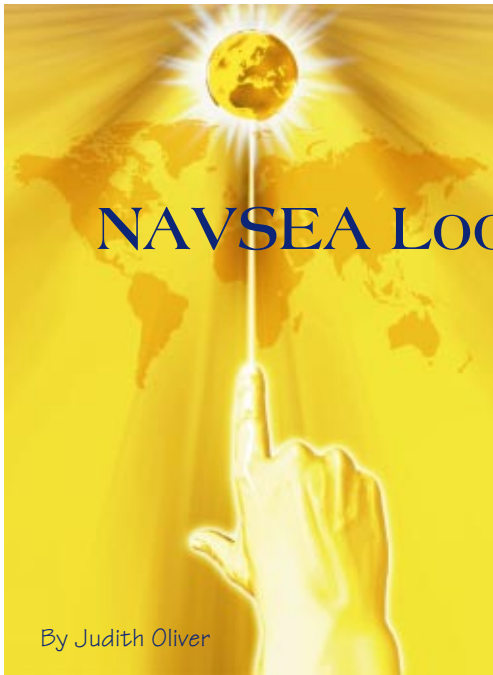
This capability empowers individual Marines and improves their decision-making abilities because they now have access to information that was previously available only to administrators. In READ ONLY format, access to this information enables the individual and small unit leaders to review data so that changes to personnel administrative information can be easily updated, greatly enhancing the quality and accuracy of information in the Marine Corps Total Force System (MCTFS).

Marine OnLine also provides free e-mail and access to every Marine with a record in MCTFS, including active, reserve and retired Marines.

Today, Marines may review their basic information record, basic training record and record of emergency data. Routine administrative rosters are available to unit commanders and include the alpha roster, end of active service roster, enlisted lineal listing and the officer MOS roster.

Work is now underway to add HQMC enterprise applications to the Marine OnLine site. Near-term upgrades include links to other Web sites and applications of interest to individual Marines, administrators and commanders.





NAVSEA Looks Forward to NMCI's Arrival

By Judith Oliver

Anticipating the benefits of the Navy Marine Corps Intranet (NMCI), NAVSEA and its nearly 50,000 team members are preparing for the arrival of NMCI's services and support.

The first at NAVSEA to implement NMCI include the Naval Surface Warfare Center (NSWC) at Crane, Indiana and NSWC Port Hueneme, California. They will be followed by NSWC Indian Head, Maryland; NAVSEA Logistics Center Detachment, Portsmouth, New Hampshire; and Naval Ordnance Safety and Security Activity, Indian Head, Maryland in the first quarter of FY01.

NAVSEA Headquarters and the Program Executive Offices will move to the Washington Navy Yard and implement NMCI by October 2001. The remaining NAVSEA field activities will follow and complete the final implementation by first quarter FY02.

NAVSEA's Chief Information Officer, Ed Shelton, expressed the organization's anticipation of NMCI's arrival by saying, "The NAVSEA team expects NMCI will increase our Information Technology capabilities, enhance organizational interoperability, reduce overall network operating costs and improve our productivity throughout

the Navy. This will enable us to deliver superior customer support anytime, anywhere."

VADM Pete Nanos spoke to the Navy League's Sea-Air-Space Exposition on 19 April about the importance of changing the way the Navy conducts business, focusing on the development of an ePortal to the Fleet. He noted that Navy Systems Commands are developing a Distance Support capability, which will ride on NMCI's backbone. This Distance Support initiative includes e-mail and Web connections (www.fleetsupport.navy.mil), along with a phone number (1-877-41-TOUCH) for the Fleet to obtain assistance. It is expected that NMCI will increase both speed and the level of Information Assurance (IA) security.

"NMCI will play a pivotal role in helping NAVSEA reach its customers and team members. This advanced technology will help NAVSEA attain its goal of 'keeping America's Navy number one in the world.'"

Having a common information infrastructure throughout the Navy will increase information sharing and improve communication within corporate NAVSEA. Leveraging new technologies will enable Navy commands like NAVSEA to fulfill their primary missions of supporting the Fleet while implementing other IT based initiatives like telemaintenance, knowledge management, distance learning, telemedicine and others.

Shelton said, "NMCI will play a pivotal role in helping NAVSEA reach its customers and team members. This advanced technology will help NAVSEA attain its goal of 'keeping America's Navy number one in the world.'"

Participation in this network is like buying a utility such as electricity or water. Payment will be made with funds already allocated for IT assets, giving NAVSEA better service for IT expenditures. This will centralize and make more efficient use of IT. With only one point of contact for security and technical support, NAVSEA will not have to maintain infrastructure or chase the progress of Information Technology.

NAVSEA's Project Office for the NMCI Program is in the office of the NAVSEA CIO. Mr. Robert Dofner is the Project Manager. He can be reached at (703) 602-9925 or 1-877-602-9925 or via e-mail NMCI@navsea.navy.mil for further questions.

⇒ Oliver is the NAVSEA CIO Communications Manager.



eBusiness: Harnessing the Power of NMCI

By Pat Christensen & Jeff Greene

To operate dynamically in today's world, companies large and small employ a combination of strategies to ensure a competitive advantage, and the Department of the Navy (DON) is no different. These strategies include corporate Intranets with links or access to the Internet – and, sometimes, even other company Intranets. eCommerce is the paperless/electronic solution to the buying and selling process; eBusiness is the use of technology, the Internet and business process reengineering to transform key processes. Both are conducted within or between Intranets and the Internet. Major companies, defining best business practices, have used long-established Intranets for a variety of business transactions. Without an Intranet, an organization can quickly develop into a collection of disparate, unconnected, and, most importantly, inefficient business environments.

The DON is aggressively pursuing a Revolution in Business Affairs, or RBA, focused on improving our business practices. The DON Chief Information Officer is leading the Enterprise-wide Information Technology initiatives that support RBA – one of those key initiatives is eBusiness. Its objective is to conduct every business transaction, regardless of functional area, in a reengineered, integrated, automated and paperless manner. The fact that the DON CIO recently devoted significant resources to create an eBusiness Team to be proactive in advancing eBusiness approaches, is an indicator of the value placed on this fast-moving initiative.

The Navy Marine Corps Intranet (NMCI) will be a key enabler for DON eBusiness. It will provide a single corporate network facilitating wide-area access, interoperability and security for critical business information. For eBusiness transactions, NMCI will become a pipeline to many business opportunities by making it possible for Navy and Marine Corps customers to seamlessly access information and conduct business throughout the extended enterprise. NMCI will allow us to harness eBusiness energies already in motion. The Navy Supply Systems Command (NAVSUP) and LIFELines provide excellent examples of the future direction of eBusiness in the DON.

On 5 May 2000, NAVSUP became the first federal activity to award a contract through a reverse auction over the Internet. It employed secure Internet-based technology to allow online suppliers to compete in real-time by lowering their prices as they saw other offers. The Navy estimates a 28.9 percent savings over the historical price for the item – in this instance, recovery sequencers and an ejection seat component for the B-1, F-15, F-16 and F-117 aircraft. In future transactions such as this, one can easily see the viability of NMCI as the portal for this process and the source of information prior to, during and after the bidding.

LIFELines2000.org is quickly becoming an important customer interface with NMCI, aggressively developing and linking to online business services. It brings Quality-of-Life and human resources to Sailors and Marines, 24/7 around the world. LIFELines' latest version is coordinating with Bureau of Medicine (BUMED) to develop online medical and dental appointments and online pharmacy services. Commander, Submarine Forces Pacific (SUBPAC) will supply online leave requests;

the Naval Supply Systems Command (NAVSUP) will provide online counseling for shipping household goods. Linking with the Defense Finance and Accounting Service (DFAS), LIFELines is providing access for civilian and military pay record changes. LIFELines is also a gateway to the Military Exchange online shopping catalogue. Through LIFELines' Business Innovations Portal, Marines can access Marine Online – the Marine Corps' administrative services support system for military records and personnel support. LIFELines is on the move to becoming a "sizzling" interface entry-point to the Navy Marine Corps Intranet.

⇒ Christensen and Greene are members of the DON CIO eBusiness Team.



We must not merely cope or adopt, we must leap to close the business practices gap through use of the Intranet.

Promoting, Protecting and Maintaining Health:

The Virtual Naval Hospital proved to be a critical component during the recent conflicts in Southwest Asia and the Balkans and is considered one of the top 20 Web sites for medical professionals.



The U.S. Navy and Marine Corps currently support 324 ships, with 33 percent of those ships deployed at sea and another 20 percent undergoing training.

Virtual Naval Hospital

This article summarizes material that appeared in the May 1999 issue of D-Lib Magazine (www.dlib.org/dlib/may99/05dalessandro.html).

The mission of the U.S. Navy's Bureau of Medicine and Surgery is to support the combat readiness of the uniformed services and promote, protect and maintain the health of all those entrusted to their care – anytime, anywhere. With geographically isolated troops and health care providers, and limited access to authoritative medical information, the Navy needed an innovative solution to meet its mission. This mission, with its challenging set of circumstances, was met by the development of a digital Web-based library called the Virtual Naval Hospital™ (VNH). This digital library enables the distribution of medical information 24 hours a day from any location. The library, in operation since 1997, is heavily used, highly regarded and expanding in size.

The VNH (www.vnh.org) helps Navy health care providers and patients prevent disease and, when illness does occur, treat the sick or injured thereby maximizing mission readiness. Health care providers find authoritative information at the point-of-care, and patients find information to live healthy lives and prevent disease. The Virtual Naval Hospital proved critical during recent conflicts in Southwest Asia and the Balkans and is considered one of the top 20 Web sites for medical professionals.

The U.S. Navy and Marine Corps currently support 324 ships, with 33 percent of those ships deployed at sea and another 20 percent undergoing training. Sailors and Marines respond to international crisis on the average of once every four weeks. This makes it challenging to relay information quickly to communities ranging in size from 100 Sailors on a submarine to 6,000 Sailors and Marines on an aircraft carrier.

The VNH system minimizes variation of medical processes as the U.S. Navy Bureau of Medicine and Surgery can ensure quality materials and the best information is available to the user.

The system was designed to be a virtual consultant and a user-focused system for the authors, contributors, medical providers and patients. The goal is to make Web-based navigation simple and user friendly by accessing the needed information in two or three clicks. This reduces the burden of carrying medical textbooks aboard ship or into the field. The users – patients and medical providers – can access this information from their homeport or while on deployment. They can access real-time reference material either through the Internet or via CD-ROM as most of the medical officers have laptops.

The VNH Team welcomes the advent of the Navy Marine Corps Intranet. Using NMCI as the basis for communications and information delivery should make the process of updating content and communicating with other health care providers more efficient and highly effective.

The Virtual Naval Hospital is a service of the U.S. Navy Bureau of Medicine and Surgery and is presented by the Electric Differential Multimedia Laboratory, University of Iowa College of Medicine.

The original article was written by CAPT Richard S. Bakalar, Medical Corps, USN; Michael P. D'Alessandro, M.D., University of Iowa; LT Denis E. Ashley MC, U.S. Naval Reserve; Donna M. D'Alessandro, M.D., University of Iowa; and Mary J.C. Hendrix, Ph.D., University of Iowa.

GM revs up its intranet portal to transport information to 100,000 employees worldwide.

By Sari Kalin

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During Michael Wiley's interview for the intranet management job at GM, no one dared take him into the conference room off the dim marble lobby on the 11th floor. Once he started work at the automotive giant's Detroit headquarters, he understood why: The team designing General Motors Corp.'s companywide intranet had turned the conference room into a virtual war room. Hundreds of multicolored stickies papered an entire wall. Each represented a yet-to-be-created site on the proposed intranet – an intranet that promised to be as complex as the \$161 billion corporation itself.

Wiley soon realized there was only one way to cut through this complexity and build a site with enough muscle to serve more than 600,000 employees worldwide: Rather than envision the intranet as a single entity that would dictate content for all of GM, Wiley pictured the intranet as a central directory site that would link to locally controlled divisional and departmental sites. The central site would become a virtual shuttle to GM. It would let users browse and search through all internal GM sites, adding links as new sites went online. It would become GM employees' primary home page, offering news, information and services related to GM as a whole and their divisions in particular. In short, the site would become a portal—an intranet portal.

Named Socrates, since the Greek philosopher would be recognizable worldwide, GM's intranet launched in June 1997. At launch, it linked to 40 internal sites. Today, this award-winning CIO Web Business 50/50 site links to and lets users search across more than 500 internal GM sites. The site reaches 100,000 GM employees around the globe, serving up more than 400,000 page views a day. "It's like a Yahoo for the company," says Wiley, whose spiky fringe of hair seems more at home in New York City, where he used to work, than in the rust belt.

Balancing Creativity and Control

Back in 1996, GM's communications group explored building an intranet to distribute press releases and other materials among its worldwide staff. Independently, GM's finance and HR groups also got the intranet bug. The departments formed a team to brainstorm about building a GM-wide intranet for all employees.

Two new executives backed the idea early on: CIO and Vice President Ralph Szygenda, formerly CIO at Bell Atlantic, where he oversaw the telco's first intranet, and Vice President of Communications John Onoda, who had been at Levi Strauss, another early intranet adopter (Onoda has since moved on to Visa USA). Even so, building an intranet would not be easy at a company

that does business in 125 countries and sells products ranging from SUVs to satellites.

One hurdle was the cumbersome process of getting browsers onto 100,000 employees' desktops. Under GM's outsourcing arrangement with Electronic Data Services Inc. (EDS) – a former GM division spun off in 1996—GM and EDS had designed the desktop platform so that users were not able to download and install new software themselves. Szygenda's Information Systems and Services (IS & S) group worked on getting Netscape Communications Corp.'s Navigator browser deployed across the company. In the meantime, says Len Marsico, director of communications technology, the intranet team worked out a deal with IS & S so that individual users could buy their own browsers and load them on their machines.

Another hurdle was balancing the need for creativity against the need for control. The intranet team feared that if it didn't soon establish companywide standards and structure, GM's intranet would become as chaotic as the Web itself; indeed, several GM engineering groups had already developed numerous intranet sites. But the team knew that it would be impossible—even undesirable—to have iron-fisted control over every intranet site. "On the Web, you want to be fast to market, and you don't want to put up a lot of impediments," says Mark Bougeaud, GM's director of Internet technology, who was involved in Socrates from the early stages. "But you have to have some level of process around it, otherwise you have the Wild West."

On Your Mark at the Portal

By February 1997, when Wiley started work as manager of emerging technology and media strategy, the intranet team had set up a placeholder site for Socrates, developed a basic style guide and technical requirements, plastered the war room wall with stickies to outline the scope of the intranet and solicited proposals from Web developers to build it. Wiley was shown to the war room and handed a stack of vendor proposals to evaluate. His first thought was, this just won't work. He suggested instead a simple yet powerful idea: Build a Yahoo-like site that would be a directory to all GM intranet sites and link to new sites as departments and divisions built them.

For the idea to work, GM would need to make it easy for departments and divisions to develop and maintain their own sites. The team approached divisions that were building intranets and offered them free hosting on Socrates' server. It also targeted keepers of information it wanted to see on Socrates and con-

vinced them to build sites. All sites had to follow the basic Socrates style guide. For example, the sites were supposed to make sure every page had a link to information about the person responsible for the page's content and to warn users before they clicked on a graphic larger than 100K. Many guidelines were in response to the limits of the client environment at the time (until 1998, Navigator 2.0 was standard, as were 13-inch monitors). But the intranet team tried not to make the constraints too rigid, since team members wanted to make it as easy as possible for departments and divisions to launch sites and add them to Socrates.

Since the launch of Socrates in June 1997, the number of GM employees with Web browsers and intranet access on their desktops has grown from 5,000 to more than 100,000. Similarly, the sophistication and number of Web sites accessible via Socrates has also grown; available content ranges from engineering documents to employee 401(k) plans. "It's really redefining the way whole teams work together," Bougeaud says. The following sampling gives an indication of what's online and how it has changed the way GM works:

Training. Employees can search GM University's catalog of classes online, sign up for online and in-classroom training, and complete online training programs. They can also set up individual development plans and track their progress; supervisors can track their employees' progress too.

Communication. GM's communications department has a home-grown content-management system for routing, approval and posting of new press releases and other official documents. Another site, for GM's communications support group (CSG), has standardized and streamlined the process for requesting graphical services, such as designing a brochure; the request can be entered on the intranet, and then CSG puts the request onto an extranet where outside vendors can see it and decide whether they want to submit a bid.

Best Practices. A new best practices area lets employees across the company enter descriptions of best practices or search through best practices entered by others.

Staffing. GM is pilot-testing a new Web application for internal posting of engineering and finance jobs and management of the job filling process. Under the pilot, employees are able to submit resumes online; the person who submitted the job requisition reviews resumes from employees at the appropriate job level; if no one internally is qualified for a given job, the job is posted on the recruiting area of GM's external corporate Web site.

Wellness. GM offers an employee wellness questionnaire online; based on their answers, employees are referred to health information and resources.

Proxied Web Sites. Since only about 15,000 of GM's employees are allowed to get through GM's firewall and surf the Web, Socrates proxies roughly 50 work-related external sites, such as www.gm.com, www.epa.gov and www.bluebook.com.

The most recent Socrates redesign in April made the site look even more like a portal. Users find content three ways: via a search engine, an alphabetical list of sites and 13 top-level channels or categories. The team was careful to give the channels general names that would always be relevant to GM, such as "education and training" or "manufacturing operations" rather than naming them after specific GM divisions. The site also offers GM news, stock price, weather in cities where GM has operations and rotating ad banners for various GM divisions.

The architecture of Socrates has also been modified in response to a change in the way GM pays for Web hosting from EDS. The site used to build a dynamic page every time someone hit the server, which chewed up a lot of CPU time. In the redesigned version, a server-side Java application generates new static HTML pages every five minutes, with updated news, ad banners and stock quotes; the site then serves up these static pages to visitors. Socrates developers expect the change to save 90 to 95 percent on CPU utilization. That's an important savings, since GM is moving to a service-level-based hosting arrangement with EDS. Under that approach, it pays only for the "Webits" – Web units of work-it uses, much the same way that a homeowner pays an electric company for BTUs used.

GM Communications funds Socrates, but individual departments and divisions pay for and maintain their own Web sites. Since 1997, GM has spent only about \$2 million on development and maintenance of Socrates. "It's a pretty small number for that type of communication," says Szygenda, who oversees GM's \$4 billion IS budget. To help raise additional money for Socrates-related expenses, Wiley says, plans are underway for Socrates to sell ad banner space to GM divisions (currently, the ads are free).

Taking on More Passengers

The bulk of GM's 600,000 employees do not have access to Socrates, primarily because they work in manufacturing plants, Wiley says. But GM is planning to pilot intranet-connected computer kiosks for use on the shop floor. The goal is to make company news and resources available on Socrates to assembly-line employees; each plant would build its own intranet home page where it could share plant-specific information with workers, such as the plant's progress toward its production quotas. Another goal is to develop Web-based front ends for existing manufacturing applications, so managers would be able to access the applications from the shop floor kiosk rather than having to leave the floor to use a PC.

Socrates' development team is also looking to copy a few other tricks of the portals to broaden Socrates' reach. They are considering launching region-specific variants of Socrates that would be managed from those regions, much the same way that Yahoo and other portals offer country-specific versions, Wiley says. In the future, they would also like to offer more personalized information online-sort of a "My Socrates" area where employees could see the news most relevant to them, how many hours they have worked or how much vacation time they have left. To Wiley, the future of Socrates seems as limitless as the Web itself. "It's incredible the progress we have made," Wiley says. "But where we can go is just incredible."

⇒ Kalin is a Senior Writer at CIO Magazine.





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ISSN 1047-9988